



Ref No: HIL/LHD/ JP (M)/MoEF/ 1245

Date: 23.11.2016

To,
The Additional Principal Chief Conservator of Forest (C)
Ministry of Environment, Forests and Climate Changes
Regional Office (ECZ), Ranchi-834002.

Sub: **Compliance Report of EC conditions for Pakhar (35.12 ha) Bauxite Mining project of M/s Hindalco Industries Limited located in Lohardaga, Jharkhand for the period April'16-Sep'16.**

Ref: **Environmental Clearance letter no J-11015/137/2006-IA II (M) dated 5th April 2007**

Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Pakhar (35.12 ha) Bauxite Mining project** of M/s Hindalco located in Lohardaga, Jharkhand for the period **April'16-Sep'16.**

Hope you will find the same in order.

Thanking You

Yours Sincerely
FOR HINDALCO INDUSTRIES LIMITED


(Bijesh Kumar Jha)
Agent of Mines

Enclosure: - As above

Copy to: Member Secretary, JSPCB, Ranchi
RO, JSPCB, Ranchi
<mef@ori.nic.in>, <mef@nic.in>, <mef.or@nic.in>, mef.or@nic.in

Compliance of conditions laid down in Environmental Clearance
PAKHAR (35.12 Ha)BAUXITE MINES
Period: April'16-Sep'16
J-11015/137/2006-IA II (M) dated 5th April 2007

Sl No	Conditions	Compliance Status
Specific Conditions		
1	All the conditions stipulated by SPCB in their NOC shall be effectively implemented.	Complied. Mining operations closed w.e.f 08.06.2009
2	The environmental clearance is subject to approval of the state land use Department, Government of Jharkhand for diversion of agricultural land for non-agricultural use.	Complied.
3.	Environmental clearance is subject to grant of forestry clearance, Necessary forestry clearance under the Forest (Conservation) Act, 1980 for an area of 3.45ha forestland shall be obtained before starting mining operation in that area.	Mining operations closed w.e.f 08.06.2009
4	Mining shall not intersect groundwater. The mine working shall be restricted to ground water table. Prior approval of the Ministry of Environment & Forests and Central Ground Water Authority shall be obtained for mining below water table.	Mining operations closed w.e.f 08.06.2009.
5	The project proponent shall ensure that no natural watercourse shall be obstructed due to any mining operation.	Complied
6	Top soil shall be stacked properly with proper slope with adequate measures and should be used for reclamation and rehabilitation of mined out areas.	Mining operations closed w.e.f 08.06.2009
7	The waste generated shall be concurrently backfilled in the mined out area. There shall be no external OB dump. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forest on six monthly basis.	Mining operations closed w.e.f 08.06.2009

8	<p>Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from mine working. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted particularly after monsoon and maintained properly.</p> <p>Garland drain (size, gradient and length) shall be constructed for mine pit and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper setting of silt material. Sedimentation pits should be constructed at the corners of the garland drains and desilted at regular intervals.</p>	Mining operations closed w.e.f 08.06.2009
9	<p>Plantation shall be raised in an area of 24.83ha including a green belt of adequate width by planting the native species around the ML area, roads, reclaimed area etc. in consultation with the local DFO / Agriculture Department. The density of the trees should be around 1500 plants per ha.</p>	Already 32.85 ha area has been planted in and around the mine/Plateau area.
10	<p>The project authority should implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.</p>	Mining operations closed w.e.f 08.06.2009
11	<p>Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring should be carried out four times in a year – pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to MOEF, Central Ground water Authority and Regional Director Central Ground Water Board.</p>	Mining operations closed w.e.f 08.06.2009
12	<p>Prior permission from the competent authority should be obtained for drawl of water from the surface water bodies.</p>	Mining operations closed w.e.f 08.06.2009
13	<p>Vehicular emissions should be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and transportation of mineral. The vehicles should be covered with a tarpaulin and shall not be overloaded.</p>	Mining operations closed w.e.f 08.06.2009
14	<p>Drills should either be operated with dust extractors or should be equipped with water injection system.</p>	Mining operations closed w.e.f 08.06.2009

15	Blasting operation should be carried out only during the daytime. Controlled blasting should be practiced. The mitigative measures for control of ground vibration and to arrest fly rocks and boulders should be implemented.	Mining operations closed w.e.f 08.06.2009.
16	Consent to operate should be obtained from SPCB prior to start of enhanced production from the mine.	Mining operations closed w.e.f 08.06.2009
17	Sewage treatment plant should be installed for the colony. ETP should also be provided for workshop and wastewater generated from mining operations.	There is no effluent from mine.
18	The project proponent should take all precautionary measures during mining operation for conservation and protection of endangered fauna such as Indian Python etc. Spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. Necessary allocation of funds for implementation of the conservation plan shall be made and the funds so allocated shall be included in the project cost. Copy of action plan may be submitted to the Ministry and its Regional Office within 3 months.	Mining operations closed w.e.f 08.06.2009
19	A Final Mine Closure plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forest 5 years in advance of final mine closure for approval.	Final Mine Closure plan (FMCP) approved by IBM.

GENERAL CONDITIONS

Sl No	Conditions	Compliance Status
1	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forest	Mining operations closed w.e.f 08.06.2009
2	No change in the calendar plan including excavation, quantum of mineral bauxite and waste should be made.	Mining operations closed w.e.f 08.06.2009
3	Four ambient air quality-monitoring station should be established in the core zone as well as in the buffer zone for RPM, SPM, SO ₂ , NO _x monitoring. Location of the stations should be decided based on the metrological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.	Mining operations closed w.e.f 08.06.2009

4	Data on ambient air quality (RPM, SPM, SO ₂ , NO _x) should be regularly submitted to the Ministry including its Regional office located at Bhubneshwar and the State Pollution Control Board / Central pollution Control Board once in six months.	Mining operations closed w.e.f 08.06.2009
5	Fugitive dust emission from all the sources should be controlled regularly. Water spraying arrangements on haul roads, loading and unloading and at transfer points should be provided and properly maintained.	Mining operations closed w.e.f 08.06.2009
6	Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operation of HEMM, etc. should be provided with ear plug / muffs.	Mining operations closed w.e.f 08.06.2009.
7	Industrial waste water (workshops and waste water from the mine) Should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19 th May, 1993 and 31 st December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.	Mining operations closed w.e.f 08.06.2009
8	Personnel working in dusty areas should wear protective respiratory devices and they should also provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.	Mining operations closed w.e.f 08.06.2009
9	A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.	Mining operations closed w.e.f 08.06.2009
10	The project authorities should inform to the Regional Office located at Bhubneshwar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	This was an operational mines hence provision of financial closure is not applicable.
11	The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other	Statement of budgetary provision and actual expenses for environmental protection measure is enclosed. It is once again

	purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Bhubneshwar.	reiterated that the funds so ear marked shall not be diverted for any other purposes other than it is committed at the beginning of the financial year. (Annexure).
12	The Regional Office of this Ministry located at Bhubneshwar shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.	Agreed however Mining operations closed w.e.f 08.06.2009 .
13.	The project proponent shall submit six monthly report on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office, Bhubaneshwar, Central Pollution Control Board and State Pollution Control Board.	Duly submitted.
14	A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal.	Complied.
15	State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Center and Collector's office / Tehsildar's Office for 30 days.	Displayed.
16	The project authorities should advertise at least in two local newspapers widely circulated, one of which locality concerned, within 7days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment and Forests at http://envfor.nic.in and a copy of the same should be forwarded to the Regional Office of this Ministry located Bhubneshwar.	Complied. Copies of the advertisement made in the local newspapers, have already been submitted to the Regional Office during our six monthly report bearing letter no HIL/GMO(M)/ENV/142dated 23.05.2007.



Eco Ventures Pvt. Ltd.

Regd. Office: 2/37, Sarvapriya Vihar, Near IIT Gate, New Delhi-110016

Corporate Office: 7/8 Bhaveshwar Bhuvan, Opp Portugese Church, Near Dindayal Upadhyay Garden,
Gokhale Road (North), Dadar (West), Mumbai 400 028. Tel: +91 22 24370520 / 6672.

E: ecoventures.mumbai@gmail.com / ecoventures@eco-ventures.in

Mahabal Enviro Engineers Pvt. Ltd.

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC,
District – Ranchi 834009

PAKHAR PLATEAU- ENVIRONMENTAL MONITORING REPORT

APRIL TO JUNE 2016

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalranchi@gmail.com

Hindalco Industries: Environmental Monitoring report

April- June 2016

CONTENT

	LOCATION
	AMBIENT AIR QUALITY
1	Pakhar Plateau- Near Office
2	Pakhar Plateau- Pakhar (115.13 ha.) Quarry No. 4
3	Pakhar Plateau- Pakhar Quarry (109.507 ha. Near Shed)
4	Pakhar Plateau Pakhar Mines(109.507 ha. Yatri Shed)
5	Pakhar Plateau- Pakhar Loading Area (109.507 ha.)
6	Pakhar Plateau-Near Weigh Bridge
	NOISE LEVEL
1	Pakhar Near Office.
2	Pakhar Mine (115.13 ha.) Pakhar Plateau
3	Pakhar Mine (109.507 ha. Loading Area) Pakhar Plateau
4	Pakhar Mine (109.507 Ha Yatri Shed) Pakhar Plateau
5	Pakhar Quarry (Near Shed)
	SPOT NOISE LEVEL
1	Near Poclairn at Pakhar Mine (115.13 ha.)
2	Loading point near Dumper at Pakhar Mines (109.507 ha. Minerals & Minerals)
	DRINKING WATER
1	Pakhar Mine-Near Canteen
	SURFACE WATER
1	Pakhar Mine-115.13 Quarry





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalaranchi@gmail.com

Hindalco Industries: Environmental Monitoring report

April- June 2016

Report no: : MEEPL/ JULY074/2016-17	Date: 18 th July, 2016
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Pakhar Plateau-Near Office	
Sample collected on: 16.06.2016	
Received: 20.06.2016	
Registered: 20.06.2016	
Test Start/End Date: 20.06.2016/23.06.2016	

LOCATION / IDENTIFICATION: Pakhar Plateau-Near Office				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	61.2
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	40.1
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	24.5
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	32.5
05.	Ammonia (NH ₃)	µg/m ³	400	13.6
06.	Ozone (O ₃)	µg/m ³	180	10.2
07.	Carbon Monoxide (CO)	mg/m ³	02	0.50
08.	Lead (Pb)	µg/m ³	1.0	0.02
09.	Nickel (Ni)	ng/m ³	20	8.9
10.	Arsenic (As)	ng/m ³	06	2.89
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.9
12.	Benzo (a) Pyrene	µg/m ³	01	0.40

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE



Head Office: Plot No. F-7, Road No. 21, Wagle Estate, Thane West - 400604, Maharashtra, India
(600 m from Hotel Rukhmini Palace Turn Opp Toyota Show Room. Near J B Sawant Bus Stop)
Phone: 2582 0658/ 3139/ 1663/ 3154 Fax: 91-22-25823543 thane@mahabal.com



Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalaranchi@gmail.com

Hindalco Industries: Environmental Monitoring report

April- June 2016

Report no: : MEEPL/ JULY075/2016-17	Date: 18 th July, 2016
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Pakhar Plateau- Pakhar (115.13 ha.) Quarry No. 4	
Sample collected on: 16.06.2016	
Received: 20.06.2016	
Registered: 20.06.2016	
Test Start/End Date: 20.06.2016/23.06.2016	

LOCATION / IDENTIFICATION: Pakhar Plateau- Pakhar (115.13 ha.) Quarry No. 4				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	59.8
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	40.1
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	29.8
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	41.2
05.	Ammonia (NH ₃)	µg/m ³	400	8.90
06.	Ozone (O ₃)	µg/m ³	180	9.2
07.	Carbon Monoxide (CO)	mg/m ³	02	0.51
08.	Lead (Pb)	µg/m ³	1.0	0.02
09.	Nickel (Ni)	ng/m ³	20	8.1
10.	Arsenic (As)	ng/m ³	06	2.89
11.	Benzene (C ₆ H ₆)	µg/m ³	05	3.0
12.	Benzo (a) Pyrene	µg/m ³	01	0.51

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalaranchi@gmail.com

Hindalco Industries: Environmental Monitoring report

April- June 2016

Report no: : MEEPL/ JULY076/2016-17	Date: 18 th July, 2016
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Pakhar Plateau- Pakhar Quarry 109.507 ha. (Near Shed)	
Sample collected on: 16.06.2016	
Received: 20.06.2016	
Registered: 20.06.2016	
Test Start/End Date: 20.06.2016/23.06.2016	

LOCATION / IDENTIFICATION: Pakhar Plateau- Pakhar Quarry 109.507 ha. (Near Shed)				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	53.6
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	38.1
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	26.5
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	41.2
05.	Ammonia (NH ₃)	µg/m ³	400	9.20
06.	Ozone (O ₃)	µg/m ³	180	8.9
07.	Carbon Monoxide (CO)	mg/m ³	02	0.51
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	ng/m ³	20	8.5
10.	Arsenic (As)	ng/m ³	06	2.89
11.	Benzene (C ₆ H ₆)	µg/m ³	05	3.0
12.	Benzo (a) Pyrene	µg/m ³	01	0.42

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalaranchi@gmail.com

Hindalco Industries: Environmental Monitoring report

April- June 2016

Report no: : MEEPL/ JULY077/2016-17	Date: 18 th July, 2016
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Pakhar Plateau- Pakhar Quarry 109.507 ha. (Yatri Shed)	
Sample collected on: 17.06.2016	
Received: 21.06.2016	
Registered: 21.06.2016	
Test Start/End Date: 21.06.2016/24.06.2016	

LOCATION / IDENTIFICATION: Pakhar Plateau- Pakhar Quarry 109.507 ha. (Yatri Shed)				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 μm) PM ₁₀	$\mu\text{g}/\text{m}^3$	100	54.2
02.	Particulate Matter (size less than 2.5 μm) PM _{2.5}	$\mu\text{g}/\text{m}^3$	60	39.5
03.	Sulphur Dioxide (SO ₂)	$\mu\text{g}/\text{m}^3$	80	29.5
04.	Nitrogen Dioxide (NO ₂)	$\mu\text{g}/\text{m}^3$	80	40.7
05.	Ammonia (NH ₃)	$\mu\text{g}/\text{m}^3$	400	8.9
06.	Ozone (O ₃)	$\mu\text{g}/\text{m}^3$	180	8.2
07.	Carbon Monoxide (CO)	mg/m^3	02	0.51
08.	Lead (Pb)	$\mu\text{g}/\text{m}^3$	1.0	0.04
09.	Nickel (Ni)	ng/m^3	20	10.1
10.	Arsenic (As)	ng/m^3	06	2.89
11.	Benzene (C ₆ H ₆)	$\mu\text{g}/\text{m}^3$	05	3.5
12.	Benzo (a) Pyrene	$\mu\text{g}/\text{m}^3$	01	0.51

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalaranchi@gmail.com

Hindalco Industries: Environmental Monitoring report

April- June 2016

Report no: : MEEPL/ JULY078/2016-17	Date: 18 th July, 2016
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Pakhar Plateau- 109.507 ha. Loading Area.	
Sample collected on: 17.06.2016	
Received: 21.06.2016	
Registered: 21.06.2016	
Test Start/End Date: 21.06.2016/24.06.2016	

LOCATION / IDENTIFICATION: Pakhar Plateau- 109.507 ha. Loading Area.				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	56.2
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	34.2
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	24.5
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	38.5
05.	Ammonia (NH ₃)	µg/m ³	400	7.54
06.	Ozone (O ₃)	µg/m ³	180	8.92
07.	Carbon Monoxide (CO)	mg/m ³	02	0.48
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	ng/m ³	20	9.4
10.	Arsenic (As)	ng/m ³	06	2.92
11.	Benzene (C ₆ H ₆)	µg/m ³	05	3.1
12.	Benzo (a) Pyrene	µg/m ³	01	0.42

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalaranchi@gmail.com

Hindalco Industries: Environmental Monitoring report

April- June 2016

Report no: : MEEPL/ JULY079/2016-17	Date: 18 th July, 2016
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Pakhar Plateau-Near Weigh Bridge	
Sample collected on: 17.06.2016	
Received: 21.06.2016	
Registered: 21.06.2016	
Test Start/End Date: 21.06.2016/24.06.2016	

LOCATION / IDENTIFICATION: Pakhar Plateau-Near Weigh Bridge				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	58.9
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	39.5
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	30.1
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	41.2
05.	Ammonia (NH ₃)	µg/m ³	400	8.9
06.	Ozone (O ₃)	µg/m ³	180	8.5
07.	Carbon Monoxide (CO)	mg/m ³	02	0.45
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	ng/m ³	20	9.9
10.	Arsenic (As)	ng/m ³	06	2.91
11.	Benzene (C ₆ H ₆)	µg/m ³	05	3.0
12.	Benzo (a) Pyrene	µg/m ³	01	0.46

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalranchi@gmail.com

Hindalco Industries: Environmental Monitoring report

April- June 2016

Report no: : MEEPL/ JULY080/2016-17	Date: 18 th July, 2016
Sample described by customer: Measurement of Noise	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Description: Measurement of Noise	
Sampling Method: Instrumental, using Sound level Metter	
Data Collection Date: 16.06.2016	
Analyse Date: 16.06.2016	

Location/Identification	Unit	Limit (day)	Result	Limit (night)	Result	Dates
Pakhar Near Office	dB (A) L _{eq}	75	48.9	70	45	16.06.2016

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE



Head Office: Plot No. F-7, Road No. 21, Wagle Estate, Thane West - 400604, Maharashtra, India
(600 m from Hotel Rukhmini Palace Turn Opp Toyota Show Room. Near J B Sawant Bus Stop)
Phone: 2582 0658/ 3139/ 1663/ 3154 Fax: 91-22-25823543 thane@mahabal.com



Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalranchi@gmail.com

Hindalco Industries: Environmental Monitoring report

April- June 2016

Report no: : MEEPL/ JULY081/2016-17	Date: 18th July, 2016
Sample described by customer: Measurement of Noise	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Description: Measurement of Noise	
Sampling Method: Instrumental, using Sound level Metter	
Data Collection Date: 16.06.2016	
Analyse Date: 16.06.2016	

Location/Identification	Unit	Limit (day)	Result	Limit (night)	Result	Dates
Pakhar Mines (115.13 ha.)	dB (A) L_{eq}	75	62.0	70	41.2	16/06/2016

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE



Head Office: Plot No. F-7, Road No. 21, Wagle Estate, Thane West - 400604, Maharashtra, India
(600 m from Hotel Rukhmini Palace Turn Opp Toyota Show Room. Near J B Sawant Bus Stop)
Phone: 2582 0658/ 3139/ 1663/ 3154 Fax: 91-22-25823543 thane@mahabal.com



Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalranchi@gmail.com

Hindalco Industries: Environmental Monitoring report

April- June 2016

Report no. : MEEPL/ JULY082/2016-17	Date: 18th July, 2016
Sample described by customer: Measurement of Noise	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Description: Measurement of Noise	
Sampling Method: Instrumental, using Sound level Metter	
Data Collection Date: 16.06.2016	
Analyse Date: 16.06.2016	

Location/Identification	Unit	Limit (day)	Result	Limit (night)	Result	Dates
Pakhar Mine (109.507 ha. of Minerals & Minerals)	dB (A) L _{eq}	75	65.0	70	39.8	16/06/2016

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalanranchi@gmail.com

Hindalco Industries: Environmental Monitoring report

April- June 2016

Report no: : MEEPL/ JULY083/2016-17	Date: 18th July, 2016
Sample described by customer: Measurement of Noise	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Description: Measurement of Noise	
Sampling Method: Instrumental, using Sound level Metter	
Data Collection Date: 17.06.2016	
Analyse Date: 17.06.2016	

Location/Identification	Unit	Limit (day)	Result	Limit (night)	Result	Dates
Pakhar Mine (109.507 ha. of Yatri Shed)	dB (A) L_{eq}	75	54.5	70	42.5	17/06/2016

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalanranchi@gmail.com

Hindalco Industries: Environmental Monitoring report

April- June 2016

Report no: : MEEPL/ JULY084/2016-17	Date: 18th July, 2016
Sample described by customer: Measurement of Noise	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Description: Measurement of Noise	
Sampling Method: Instrumental, using Sound level Metter	
Data Collection Date: 17.06.2016	
Analyse Date: 17.06.2016	

Location/Identification	Unit	Limit (day)	Result	Limit (night)	Result	Dates
Pakhar Quarry (Near Shed)	dB (A) L_{eq}	75	52.1	70	43.5	17/06/2016

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalaranchi@gmail.com

Hindalco Industries: Environmental Monitoring report

April- June 2016

Report no: :MEEPL/ JULY085/2016-17	Date: 18th July, 2016
Sample described by customer: Measurement of Spot Noise	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Description: Measurement of Spot Noise	
Sampling Method: Instrumental, using Sound level Metter	
Data Collection Date: 17.06.2016	
Analyse Date: 17.06.2016	

Location/Identification	Unit	Limit (day)	Result	Dates
Pakhar Mines	dB (A) L_{eq}	75	64.0	17/06/2016

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE



Head Office: Plot No. F-7, Road No. 21, Wagle Estate, Thane West - 400604, Maharashtra, India
(600 m from Hotel Rukhmini Palace Turn Opp Toyota Show Room. Near J B Sawant Bus Stop)
Phone: 2582 0658/ 3139/ 1663/ 3154 Fax: 91-22-25823543 thane@mahabal.com



Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalranchi@gmail.com

Hindalco Industries: Environmental Monitoring report

April- June 2016

Report no: : MEEPL/ JULY086/2016-17	Date: 18th July, 2016
Sample described by customer: Measurement of Spot Noise	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Description: Measurement of Spot Noise	
Sampling Method: Instrumental, using Sound level Metter	
Data Collection Date: 17.06.2016	
Analyse Date: 17.06.2016	

Location/Identification	Unit	Limit (day)	Result	Dates
Pakhar Mines (109.507 ha. Of Minerals & Minerals) Loading point near Dumper	dB (A) L_{eq}	75	71.2	17/06/2016

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalaranchi@gmail.com

Hindalco Industries: Environmental Monitoring report

April- June 2016

Report No: MEEPL/JULY087/2016-17	Date: 18 th July, 2016
Sample described by customer : DRINKING WATER-POTABILITY	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Type: DRINKING WATER-POTABILITY	
Marks on Sample: Location: Near Canteen	
Quantity: 5 L X 2 No. PVC Can	
Sample collected on: 17.06.2016	
Received: 18.06.2016	
Registered: 18.06.2016	
Test Start/End Date: 18.06.2016/22.06.2016	

Sl. No.	Parameters	Unit	Result	Acceptable Limit (IS 10500:2012)	Method reference
1	Colour	Hazen	<1	5 Max	APHA 22 nd Ed. 2012, 2120-B, 2-6
2	Odour	--	Agreeable	Agreeable	IS 3025 (Part 7): 1983, Reaffirmed 2006
3	Taste	--	Agreeable	Agreeable	IS 3025 (Part 7): 1983, Reaffirmed 2006
4	Turbidity	NTU	0.32	1 Max	APHA 22 nd Ed. 2012, 2130-B, 2-13
5	pH	--	7.1	6.5-8.5	APHA 22 nd Ed. 2012, 4500-H+-B, 4-92
6	Free Chlorides (Residual)	mg/l	<0.05	0.2 min	APHA 22 nd Ed. 2012, 4500-CI-G, 4-69
7	Total Dissolved Solids	mg/l	100	500 max	IS 3025 (Part 16): 1984, Reaffirmed 2006
8	Monochloramines	mg/l	<0.05	--	APHA 22 nd Ed. 2012, 4500-CIG, 4-69
9	Dichloramines	mg/l	<0.05	--	APHA 22 nd Ed. 2012, 4500-CIG, 4-69
10	Total hardness (as CaCO ₃)	mg/l	71	200 max	APHA 22 nd Ed. 2012, 4500-CIG, 4-69
11	Alkalinity Total (as CaCO ₃)	mg/l	79	200 max	IS 3025 (Part 237): 1986, Reaffirmed 2009
12	Chloride (as Cl)	mg/l	10.5	250 max	APHA 22 nd Ed. 2012, 4500-CI-b, 4-72
13	Sulphate (as SO ₄)	mg/l	6.5	200 max	APHA 22 nd Ed. 2012, 4500-so4-e, 4-190



Head Office: Plot No. F-7, Road No. 21, Wagle Estate, Thane West - 400604, Maharashtra, India
(600 m from Hotel Rukhmini Palace Turn Opp Toyota Show Room. Near J B Sawant Bus Stop)
Phone: 2582 0658/ 3139/ 1663/ 3154 Fax: 91-22-25823543 thane@mahabal.com



Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalaranchi@gmail.com

Hindalco Industries: Environmental Monitoring report

April- June 2016

Continuation Sheet
MEEPL/JULY087/2016-17

Report No: MEEPL/JULY087/2016-17					Date: 18 th July, 2016
Sl. No.	Parameters	Unit	Result	Acceptable Limit (IS10500:2012)	Method reference
14	Nitrate (as NO ₃)	mg/l	1.10	45 max	APHA 22 nd Ed. 2012, 4500-NO ₃ -E, 4-125
15	Fluoride (as F)	mg/l	0.5	1 max	APHA 22 nd Ed. 2012, 4500-FB & D, 4-84, 4-87
16	Boron (as B)	mg/l	0.12	0.5 max	APHA 22 nd Ed. 2012, 4500-BB, 4-25
17	Calcium (as Ca)	mg/l	20.1	75 max	APHA 22 nd Ed. 2012, 3500-Ca-B, 3-67
18	Magnesium (as Mg)	mg/l	6.0	30 max	APHA 22 nd Ed. 2012, 3500-Mg-B, 3-84
19	Ammonical Nitrogen/Total Ammonia	mg/l	<0.1	--	APHA 22 nd Ed. 2012, 4500-NH ₃ -F, 4-115
20	Iron (as Fe)	mg/l	0.12	0.3 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
21	Manganese (as Mn)	mg/l	N.D	0.1 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
22	Aluminium (as Al)	mg/l	0.01	0.03 max	APHA 22 nd Ed. 2012, 3500-Al-B, 3-61
23	Cadmium (as Cd)	mg/l	N.D	0.003 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
24	Chromium Total (as Cr)	mg/l	N.D	0.05 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
25	Copper (as Cu)	mg/l	N.D	0.05 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
26	Lead (as Pb)	mg/l	N.D	0.01 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
27	Zinc (as Zn)	mg/l	0.15	5 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
28	Arsenic (as As)	mg/l	0.006	0.01 max	APHA 22 nd Ed. 2012, 3114-B, 3-38
29	Selenium (as Se)	mg/l	N.D	0.001 max	APHA 22 nd Ed. 2012, 3112-B, 3-23
30	Mercury (as hg)	mg/l	N.D	0.01 max	APHA 22 nd Ed. 2012, 3114-B, 3-38
31	Nickel (as Ni)	mg/l	<0.008	0.02 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
32	Mineral Oil	mg/l	N.D	0.5 max	IS 3025 (Part 39): 1991, Reaffirmed 2003: ed. 2.1
33	Cyanide (as CN)	mg/l	N.D	0.05 max	APHA 22 nd ED. 2012, 4500-CN.C & 4-39 & 4-44
34	Anionic detergents as MBAS	mg/l	<0.1	0.2 max	APHA 22 nd ED. 2012, 5540-C.C & 5-53
35	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	N.D	0.001 max	APHA 22 nd ED. 2012, 5530-B & C 5-4753
36	Polynuclear aromatic hydrocarbons (PAH)	mg/l	N.D	0.0001 max	APHA 22 nd ED. 2012, 6440, 6-93
37	Polychlorinated Biphenyls (PCBs)	mg/l	N.D	0.0005 max	USEPA Method 8082
38	Sulphide (as S)	mg/l	N.D	0.05 max	APHA 22 nd ED. 2012, 4500-S2-C 4-175 & F 4-178



Head Office: Plot No. F-7, Road No. 21, Wagle Estate, Thane West - 400604, Maharashtra, India
(600 m from Hotel Rukhmini Palace Turn Opp Toyota Show Room. Near J B Sawant Bus Stop)
Phone: 2582 0658/ 3139/ 1663/ 3154 Fax: 91-22-25823543 thane@mahabal.com



Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District– Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalaranchi@gmail.com

Hindalco Industries: Environmental Monitoring report

April- June 2016

Continuation Sheet
MEEPL/JULY087/2016-17

Report No: MEEPL/JULY087/2016-17					Date: 18 th July, 2016
Sl. No.	Parameters	Unit	Result	Acceptable Limit (IS 10500:2012)	Method Reference
Microbiological Analysis					
1	Total Colliforms	MPN/100mL	N.D	<1.1	APHA 22 nd Ed. 2012, 9221-B & C, 9-66, 9-69 and 9-67
2	E-Coli	MPN/100mL	N.D	Absent	APHA 22 nd Ed. 2012, 9221-B & C, 9-66, 9-69 and 9-76
Pesticides Residues					
3	p.p DDT	µg/L	N.D	1	US EPA 508-1995
4	o.p DDT	µg/L	N.D	1	US EPA 508-1995
5	p.p DDE	µg/L	N.D	1	US EPA 508-1995
6	o.p DDE	µg/L	N.D	1	US EPA 508-1995
7	p.p DDD	µg/L	N.D	1	US EPA 508-1995
8	o.p DDD	µg/L	N.D	1	US EPA 508-1995
9	γ-HCH (Lindance)	µg/L	<0.01	2	US EPA 508-1995
10	α-HCH	µg/L	<0.01	0.01	US EPA 508-1995
11	β-HCH	µg/L	N.D	0.04	US EPA 508-1995
12	ε-HCH	µg/L	N.D	0.04	US EPA 508-1995
13	Butachlor	µg/L	N.D	125	US EPA 508-1995
14	Alachlor	µg/L	N.D	20	US EPA 508-1995
15	Atrazine	µg/L	N.D	2	US EPA 508-1995
16	α Endosulfan	µg/L	N.D	0.4	US EPA 508-1995
17	β Endosulfan	µg/L	N.D	0.4	US EPA 508-1995
18	Endosulfan Sulphate	µg/L	N.D	0.4	US EPA 508-1995
19	Ethion	µg/L	N.D	3	US EPA 8141A-1994
20	Malathion	µg/L	N.D	190	US EPA 8141A-1994
21	Methoyl Parathion	µg/L	N.D	0.3	US EPA 8141A-1994
22	Monocrotophos	µg/L	N.D	1	US EPA 8141A-1994
23	Phorate	µg/L	N.D	2	US EPA 8141A-1994
24	Chlorpyrifos	µg/L	N.D	30	US EPA 8141A-1994
25	Aldrin	µg/L	N.D	0.03	US EPA 508-1995
26	Dieldrin	µg/L	N.D	0.03	US EPA 508-1995
Remarks: N.D- Not Detected					

Conclusion : The Physical & Chemical Analysis report indicates that the water is not contaminated and potable.

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalaranchi@gmail.com

Hindalco Industries: Environmental Monitoring report

April- June 2016

Report No: MEEPL./JULY088/2016-17	Date: 18 th July, 2016
Sample described by customer : SURFACE WATER - POTABILITY	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Type: SURFACE WATER	
Marks on Sample: Location: 115.13 Quarry	
Quantity: 5 L X 2 No. PVC Can	
Sample collected on: 17.06.2016	
Received: 18.06.2016	
Registered: 18.06.2016	
Test Start/End Date: 18.06.2016/22.06.2016	

Sl. No.	Parameters	Unit	Result	Acceptable Limit (IS 10500:2012)	Method reference
1	Colour	Hazen	<1	5 Max	APHA 22 nd Ed. 2012, 2120-B, 2-6
2	Odour	--	Agreeable	Agreeable	IS 3025 (Part 7): 1983, Reaffirmed 2006
3	Taste	--	Agreeable	Agreeable	IS 3025 (Part 7): 1983, Reaffirmed 2006
4	Turbidity	NTU	0.32	1 Max	APHA 22 nd Ed. 2012, 2130-B, 2-13
5	pH	--	7.0	6.5-8.5	APHA 22 nd Ed. 2012, 4500-H+-B, 4-92
6	Free Chlorides (Residual)	mg/l	<0.05	0.2 min	APHA 22 nd Ed. 2012, 4500-Cl-G, 4-69
7	Total Dissolved Solids	mg/l	100	500 max	IS 3025 (Part 16): 1984, Reaffirmed 2006
8	Monochloramines	mg/l	<0.05	--	APHA 22 nd Ed. 2012, 4500-CIG, 4-69
9	Dichloramines	mg/l	<0.05	--	APHA 22 nd Ed. 2012, 4500-CIG, 4-69
10	Total hardness (as CaCO ₃)	mg/l	72	200 max	APHA 22 nd Ed. 2012, 4500-CIG, 4-69
11	Alkalinity Total (as CaCO ₃)	mg/l	80	200 max	IS 3025 (Part 237): 1986, Reaffirmed 2009
12	Chloride (as Cl)	mg/l	10.2	250 max	APHA 22 nd Ed. 2012, 4500-Cl-b, 4-72
13	Sulphate (as SO ₄)	mg/l	7.2	200 max	APHA 22 nd Ed. 2012, 4500-so4-e, 4-190



Head Office: Plot No. F-7, Road No. 21, Wagle Estate, Thane West - 400604, Maharashtra, India
(600 m from Hotel Rukhmini Palace Turn Opp Toyota Show Room. Near J B Sawant Bus Stop)
Phone: 2582 0658/ 3139/ 1663/ 3154 Fax: 91-22-25823543 thane@mahabal.com



Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalaranchi@gmail.com

Hindalco Industries: Environmental Monitoring report

April- June 2016

Continuation Sheet
MEEPL/JULY088/2016-17

Report No: MEEPL/JULY088/2016-17					Date: 18 th July, 2016
Sl. No.	Parameters	Unit	Result	Acceptable Limit (IS10500:2012)	Method reference
14	Nitrate (as NO ₃)	mg/l	1.25	45 max	APHA 22 nd Ed. 2012, 4500-NO ₃ -E, 4-125
15	Fluoride (as F)	mg/l	0.2	1 max	APHA 22 nd Ed. 2012, 4500-FB & D, 4-84, 4-87
16	Boron (as B)	mg/l	0.24	0.5 max	APHA 22 nd Ed. 2012, 4500-BB, 4-25
17	Calcium (as Ca)	mg/l	21.2	75 max	APHA 22 nd Ed. 2012, 3500-Ca-B, 3-67
18	Magnesium (as Mg)	mg/l	6.0	30 max	APHA 22 nd Ed. 2012, 3500-Mg-B, 3-84
19	Ammonical Nitrogen/Total Ammonia	mg/l	<0.1	--	APHA 22 nd Ed. 2012, 4500-NH ₃ -F, 4-115
20	Iron (as Fe)	mg/l	0.10	0.3 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
21	Manganese (as Mn)	mg/l	N.D	0.1 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
22	Aluminium (as Al)	mg/l	0.01	0.03 max	APHA 22 nd Ed. 2012, 3500-Al-B, 3-61
23	Cadmium (as Cd)	mg/l	N.D	0.003 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
24	Chromium Total (as Cr)	mg/l	N.D	0.05 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
25	Copper (as Cu)	mg/l	N.D	0.05 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
26	Lead (as Pb)	mg/l	N.D	0.01 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
27	Zinc (as Zn)	mg/l	0.15	5 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
28	Arsenic (as As)	mg/l	<0.01	0.01 max	APHA 22 nd Ed. 2012, 3114-B, 3-38
29	Selenium (as Se)	mg/l	N.D	0.001 max	APHA 22 nd Ed. 2012, 3112-B, 3-23
30	Mercury (as hg)	mg/l	N.D	0.01 max	APHA 22 nd Ed. 2012, 3114-B, 3-38
31	Nickel (as Ni)	mg/l	<0.008	0.02 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
32	Mineral Oil	mg/l	N.D	0.5 max	IS 3025 (Part 39): 1991, Reaffirmed 2003: ed. 2.1
33	Cyanide (as CN)	mg/l	N.D	0.05 max	APHA 22 nd ED. 2012, 4500-C.N.C & 4-39 & 4-44
34	Anionic detergents as MBAS	mg/l	<0.1	0.2 max	APHA 22 nd ED. 2012, 5540-C.C & 5-53
35	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	N.D	0.001 max	APHA 22 nd ED. 2012, 5530-B & C 5-4753
36	Polynuclear aromatic hydrocarbons (PAH)	mg/l	N.D	0.0001 max	APHA 22 nd ED. 2012, 6440, 6-93
37	Polychlorinated Biphenyls (PCBs)	mg/l	N.D	0.0005 max	USEPA Method 8082
38	Sulphide (as S)	mg/l	N.D	0.05 max	APHA 22 nd ED. 2012, 4500-S2-C 4-175 & F 4-178



Head Office: Plot No. F-7, Road No. 21, Wagle Estate, Thane West - 400604, Maharashtra, India
(600 m from Hotel Rukhmini Palace Turn Opp Toyota Show Room. Near j B Sawant Bus Stop)
Phone: 2582 0658/ 3139/ 1663/ 3154 Fax: 91-22-25823543 thane@mahabal.com



Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalaranchi@gmail.com

Hindalco Industries: Environmental Monitoring report

April- June 2016

Continuation Sheet
MEEPL/JULY088/2016-17

Report No: MEEPL/JULY088/2016-17					Date: 18 th July, 2016
Sl. No.	Parameters	Unit	Result	Acceptable Limit (IS 10500:2012)	Method Reference
Microbiological Analysis					
1	Total Colliforms	MPN/100mL	N.D	<1.1	APHA 22 nd Ed. 2012, 9221-B & C, 9-66, 9-69 and 9-67
2	E-Coli	MPN/100mL	N.D	Absent	APHA 22 nd Ed. 2012, 9221-B & C, 9-66, 9-69 and 9-76
Pesticides Residues					
3	p.p DDT	µg/L	N.D	1	US EPA 508-1995
4	o.p DDT	µg/L	N.D	1	US EPA 508-1995
5	p.p DDE	µg/L	N.D	1	US EPA 508-1995
6	o.p DDE	µg/L	N.D	1	US EPA 508-1995
7	p.p DDD	µg/L	N.D	1	US EPA 508-1995
8	o.p DDD	µg/L	N.D	1	US EPA 508-1995
9	γ-HCH (Lindane)	µg/L	<0.01	2	US EPA 508-1995
10	α -HCH	µg/L	<0.01	0.01	US EPA 508-1995
11	β-HCH	µg/L	N.D	0.04	US EPA 508-1995
12	δ- HCH	µg/L	N.D	0.04	US EPA 508-1995
13	Butachlor	µg/L	N.D	125	US EPA 508-1995
14	Alachlor	µg/L	N.D	20	US EPA 508-1995
15	Atrazine	µg/L	N.D	2	US EPA 508-1995
16	α Endosulfan	µg/L	N.D	0.4	US EPA 508-1995
17	β Endosulfan	µg/L	N.D	0.4	US EPA 508-1995
18	Endosulfan Sulphate	µg/L	N.D	0.4	US EPA 508-1995
19	Ethion	µg/L	N.D	3	US EPA 8141A-1994
20	Malathion	µg/L	N.D	190	US EPA 8141A-1994
21	Methoyl Parathion	µg/L	N.D	0.3	US EPA 8141A-1994
22	Monocrotophos	µg/L	N.D	1	US EPA 8141A-1994
23	Phorate	µg/L	N.D	2	US EPA 8141A-1994
24	Chlorpyrifos	µg/L	N.D	30	US EPA 8141A-1994
25	Aldrin	µg/L	N.D	0.03	US EPA 508-1995
26	Dieldrin	µg/L	N.D	0.03	US EPA 508-1995
Remarks: N.D- Not Detected					

Conclusion : The Physical & Chemical Analysis report indicates that the water is not contaminated and potable.

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Eco Ventures Pvt. Ltd.

Regd. Office: 2/37, Sarvapriya Vihar, Near IIT Gate, New Delhi-110016
Corporate Office: 7/8 Bhaveshwar Bhuvan, Opp Portugese Church, Near Dindayal Upadhyay Garden,
Gokhale Road (North), Dadar (West), Mumbai 400 028. Tel: +91 22 24370520 / 6672.
E: ecoventures.mumbai@gmail.com / ecoventures@eco-ventures.in

Mahabal Enviro Engineers Pvt. Ltd.

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC,
District – Ranchi 834009

PAKHAR PLATEAU- ENVIRONMENTAL MONITORING REPORT

JULY TO SEPTEMBER 2016

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalranchi@gmail.com

Hindalco Industries: Environmental Monitoring Report

JULY - SEPTEMBER 2016

CONTENT

	LOCATION
	AMBIENT AIR QUALITY
1	Pakhar Plateau- Near Office
2	Pakhar Plateau- Pakhar (115.13 ha.) Quarry No. 4
3	Pakhar Plateau- Pakhar Quarry (109.507 ha. Near Shed)
4	Pakhar Plateau Pakhar Mines(109.507 ha. Yatri Shed)
5	Pakhar Plateau- Pakhar Loading Area (109.507 ha.)
6	Pakhar Plateau-Near Weigh Bridge
	NOISE LEVEL
1	Pakhar Near Office.
2	Pakhar Mine (115.13 ha.) Pakhar Plateau
3	Pakhar Mine (109.507 ha. Loading Area) Pakhar Plateau
4	Pakhar Mine (109.507 Ha Yatri Shed) Pakhar Plateau
5	Pakhar Quarry (Near Shed)
	SPOT NOISE LEVEL
1	Near Poclairn at Pakhar Mine (115.13 ha.)
2	Loading point near Dumper at Pakhar Mines (109.507 ha. Minerals & Minerals)
	DRINKING WATER
1	Pakhar Mine-Near Canteen
	SURFACE WATER
1	Pakhar Mine-115.13 Quarry





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalaranchi@gmail.com

Hindalco Industries: Environmental Monitoring Report

JULY – SEPTEMBER 2016

Report no: : MEEPL/ OCT0147/2016-17	Date: 31 st October, 2016
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Pakhar Plateau-Near Office	
Sample collected on: 22.09.2016	
Received: 23.09.2016	
Registered: 23.09.2016	
Test Start/End Date: 23.09.2016/25.09.2016	

LOCATION / IDENTIFICATION: Pakhar Plateau-Near Office				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	68.1
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	34.7
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	26.3
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	34.8
05.	Ammonia (NH ₃)	µg/m ³	400	14.1
06.	Ozone (O ₃)	µg/m ³	180	17.5
07.	Carbon Monoxide (CO)	mg/m ³	02	0.42
08.	Lead (Pb)	µg/m ³	1.0	0.02
09.	Nickel (Ni)	ng/m ³	20	5.1
10.	Arsenic (As)	ng/m ³	06	2.74
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.5
12.	Benzo (a) Pyrene	µg/m ³	01	0.36

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE



Head Office: Plot No. F-7, Road No. 21, Wagle Estate, Thane West - 400604, Maharashtra, India
(600 m from Hotel Rukhmini Palace Turn Opp Toyota Show Room. Near J B Sawant Bus Stop)
Phone: 2582 0658/ 3139/ 1663/ 3154 Fax: 91-22-25823543 thane@mahabal.com



Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalranchi@gmail.com

Hindalco Industries: Environmental Monitoring Report

JULY – SEPTEMBER 2016

Report no: : MEEPL/ OCT0148/2016-17	Date: 31 st October, 2016
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Pakhar Plateau- Pakhar (115.13 ha.) Quarry No. 4	
Sample collected on: 25.09.2016	
Received: 26.09.2016	
Registered: 26.09.2016	
Test Start/End Date: 26.09.2016/28.09.2016	

LOCATION / IDENTIFICATION: Pakhar Plateau- Pakhar (115.13 ha.) Quarry No. 4				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	65.0
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	43.7
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	21.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	34.0
05.	Ammonia (NH ₃)	µg/m ³	400	11.5
06.	Ozone (O ₃)	µg/m ³	180	13.2
07.	Carbon Monoxide (CO)	mg/m ³	02	0.48
08.	Lead (Pb)	µg/m ³	1.0	0.02
09.	Nickel (Ni)	ng/m ³	20	6.4
10.	Arsenic (As)	ng/m ³	06	2.72
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.8
12.	Benzo (a) Pyrene	µg/m ³	01	0.47

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE



Head Office: Plot No. F-7, Road No. 21, Wagle Estate, Thane West - 400604, Maharashtra, India
(600 m from Hotel Rukhmini Palace Turn Opp Toyota Show Room. Near J B Sawant Bus Stop)
Phone: 2582 0658/ 3139/ 1663/ 3154 Fax: 91-22-25823543 thane@mahabal.com



Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail:mahabalranchi@gmail.com

Hindalco Industries: Environmental Monitoring Report

JULY – SEPTEMBER 2016

Report no: : MEEPL/ OCT0149/2016-17	Date: 31 st October, 2016
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Pakhar Plateau- Pakhar Quarry 109.507 ha. (Near Shed)	
Sample collected on: 22.09.2016	
Received: 23.09.2016	
Registered: 23.09.2016	
Test Start/End Date: 23.09.2016/25.09.2016	

LOCATION / IDENTIFICATION: Pakhar Plateau- Pakhar Quarry 109.507 ha. (Near Shed)				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	59.2
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	34.5
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	22.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	39.2
05.	Ammonia (NH ₃)	µg/m ³	400	12.1
06.	Ozone (O ₃)	µg/m ³	180	16.4
07.	Carbon Monoxide (CO)	mg/m ³	02	0.49
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	ng/m ³	20	6.4
10.	Arsenic (As)	ng/m ³	06	2.85
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.8
12.	Benzo (a) Pyrene	µg/m ³	01	0.41

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail:mahabalranchi@gmail.com

Hindalco Industries: Environmental Monitoring Report

JULY – SEPTEMBER 2016

Report no: : MEEPL/ OCT0150/2016-17	Date: 31 st October, 2016
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Pakhar Plateau- Pakhar Quarry 109.507 ha. (Yatri Shed)	
Sample collected on: 25.09.2016	
Received: 26.09.2016	
Registered: 26.09.2016	
Test Start/End Date: 26.09.2016/28.09.2016	

LOCATION / IDENTIFICATION: Pakhar Plateau- Pakhar Quarry 109.507 ha. (Yatri Shed)				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	42.9
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	25.1
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	21.5
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	35.8
05.	Ammonia (NH ₃)	µg/m ³	400	11.3
06.	Ozone (O ₃)	µg/m ³	180	17.5
07.	Carbon Monoxide (CO)	mg/m ³	02	0.51
08.	Lead (Pb)	µg/m ³	1.0	0.02
09.	Nickel (Ni)	ng/m ³	20	7.2
10.	Arsenic (As)	ng/m ³	06	2.84
11.	Benzene (C ₆ H ₆)	µg/m ³	05	3.1
12.	Benzo (a) Pyrene	µg/m ³	01	0.49

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalranchi@gmail.com

Hindalco Industries: Environmental Monitoring Report

JULY – SEPTEMBER 2016

Report no: : MEEPL/ OCT0151/2016-17	Date: 31 st October, 2016
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Pakhar Plateau- 109.507 ha. Loading Area.	
Sample collected on: 22.09.2016	
Received: 23.09.2016	
Registered: 23.09.2016	
Test Start/End Date: 23.09.2016/25.09.2016	

LOCATION / IDENTIFICATION: Pakhar Plateau- 109.507 ha. Loading Area.				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	61.8
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	37.3
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	23.7
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	38.1
05.	Ammonia (NH ₃)	µg/m ³	400	9.5
06.	Ozone (O ₃)	µg/m ³	180	13.7
07.	Carbon Monoxide (CO)	mg/m ³	02	0.45
08.	Lead (Pb)	µg/m ³	1.0	0.02
09.	Nickel (Ni)	ng/m ³	20	8.1
10.	Arsenic (As)	ng/m ³	06	2.90
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.8
12.	Benzo (a) Pyrene	µg/m ³	01	0.40

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalaranchi@gmail.com

Hindalco Industries: Environmental Monitoring Report

JULY – SEPTEMBER 2016

Report no: : MEEPL/ OCT0152/2016-17	Date: 31 st October, 2016
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Pakhar Plateau-Near Weigh Bridge	
Sample collected on: 25.09.2016	
Received: 26.09.2016	
Registered: 26.09.2016	
Test Start/End Date: 26.09.2016/28.09.2016	

LOCATION / IDENTIFICATION: Pakhar Plateau-Near Weigh Bridge				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	63.0
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	35.7
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	26.1
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	39.5
05.	Ammonia (NH ₃)	µg/m ³	400	10.2
06.	Ozone (O ₃)	µg/m ³	180	13.7
07.	Carbon Monoxide (CO)	mg/m ³	02	0.48
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	ng/m ³	20	8.1
10.	Arsenic (As)	ng/m ³	06	2.83
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.9
12.	Benzo (a) Pyrene	µg/m ³	01	0.41

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail:mahabalranchi@gmail.com

Hindalco Industries: Environmental Monitoring Report

JULY – SEPTEMBER 2016

Report no : MEEPL/ OCT0153/2016-17	Date: 31 st October, 2016
Sample described by customer: Measurement of Noise	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Description: Measurement of Noise	
Sampling Method: Instrumental, using Sound level Metter	
Data Collection Date: 22.09.2016	
Analyse Date: 23.09.2016	

Location/Identification	Unit	Limit (day)	Result	Limit (night)	Result	Dates
Pakhar Near Office	dB (A) L _{eq}	75	51.1	70	43.5	22.09.2016

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE



Head Office: Plot No. F-7, Road No. 21, Wagle Estate, Thane West - 400604, Maharashtra, India
(600 m from Hotel Rukhmini Palace Turn Opp Toyota Show Room. Near J B Sawant Bus Stop)
Phone: 2582 0658/ 3139/ 1663/ 3154 **Fax:** 91-22-25823543 **thane@mahabal.com**



Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail:mahabalranchi@gmail.com

Hindalco Industries: Environmental Monitoring Report

JULY - SEPTEMBER 2016

Report no. : MEEPL/ OCT0154/2016-17	Date: 31st October, 2016
Sample described by customer: Measurement of Noise	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Description: Measurement of Noise	
Sampling Method: Instrumental, using Sound level Metter	
Data Collection Date: 22.09.2016	
Analyse Date: 22.09.2016	

Location/Identification	Unit	Limit (day)	Result	Limit (night)	Result	Dates
Pakhar Mines (115.13 ha.)	dB (A) Leq	75	58.9	70	46.1	22.09.2016

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE



Head Office: Plot No. F-7, Road No. 21, Wagle Estate, Thane West - 400604, Maharashtra, India
(600 m from Hotel Rukhmini Palace Turn Opp Toyota Show Room. Near J B Sawant Bus Stop)
Phone: 2582 0658/ 3139/ 1663/ 3154 Fax: 91-22-25823543 thane@mahabal.com



Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalranchi@gmail.com

Hindalco Industries: Environmental Monitoring Report

JULY - SEPTEMBER 2016

Report no. : MEEPL/ OCT0155/2016-17	Date: 31st October, 2016
Sample described by customer: Measurement of Noise	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Description: Measurement of Noise	
Sampling Method: Instrumental, using Sound level Metter	
Data Collection Date: 22.09.2016	
Analyse Date: 22.09.2016	

Location/Identification	Unit	Limit (day)	Result	Limit (night)	Result	Dates
Pakhar Mine (109.507 ha. of Minerals & Minerals)	dB (A) L _{eq}	75	61.8	70	36.2	22.09/2016

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalranchi@gmail.com

Hindalco Industries: Environmental Monitoring Report

JULY - SEPTEMBER 2016

Report no. : MEEPL/ OCT0156/2016-17	Date: 31st October, 2016
Sample described by customer: Measurement of Noise	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Description: Measurement of Noise	
Sampling Method: Instrumental, using Sound level Metter	
Data Collection Date: 22.09.2016	
Analyse Date: 22.09.2016	

Location/Identification	Unit	Limit (day)	Result	Limit (night)	Result	Dates
Pakhar Mine (109.507 ha, of Yatri Shed)	dB (A) L_{eq}	75	52.8	70	40.0	22.09.2016

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalranchi@gmail.com

Hindalco Industries: Environmental Monitoring Report

JULY – SEPTEMBER 2016

Report no: : MEEPL/ OCT0157/2016-17	Date: 31st October, 2016
Sample described by customer: Measurement of Noise	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Description: Measurement of Noise	
Sampling Method: Instrumental, using Sound level Metter	
Data Collection Date: 22.09.2016	
Analyse Date: 22.09.2016	

Location/Identification	Unit	Limit (day)	Result	Limit (night)	Result	Dates
Pakhar Quarry (Near Shed)	dB (A) L_{eq}	75	50.9	70	41.4	22.09.2016

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalranchi@gmail.com

Hindalco Industries: Environmental Monitoring Report

JULY - SEPTEMBER 2016

Report no. : MEEPL/ OCT0158/2016-17	Date: 31st October, 2016
Sample described by customer: Measurement of Spot Noise	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Description: Measurement of Spot Noise	
Sampling Method: Instrumental, using Sound level Metter	
Data Collection Date: 22.09.2016	
Analyse Date: 22.09.2016	

Location/Identification	Unit	Limit (day)	Result	Dates
Pakhar Mines	dB (A) L_{eq}	75	62.1	22.09.2016

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE



Head Office: Plot No. F-7, Road No. 21, Wagle Estate, Thane West - 400604, Maharashtra, India
(600 m from Hotel Rukhmini Palace Turn Opp Toyota Show Room. Near J B Sawant Bus Stop)
Phone: 2582 0658/ 3139/ 1663/ 3154 Fax: 91-22-25823543 thane@mahabal.com



Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalranchi@gmail.com

Hindalco Industries: Environmental Monitoring Report

JULY – SEPTEMBER 2016

Report no. : MEEPL/ OCT0159/2016-17	Date: 31st October, 2016
Sample described by customer: Measurement of Spot Noise	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Description: Measurement of Spot Noise	
Sampling Method: Instrumental, using Sound level Metter	
Data Collection Date: 22.09.2016	
Analyse Date: 22.09.2016	

Location/Identification	Unit	Limit (day)	Result	Dates
Pakhar Mines (109.507 ha. Of Minerals & Minerals) Loading point near Dumper	dB (A) L_{eq}	75	68.5	22.09.2016

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail:mahabalranchi@gmail.com

Hindalco Industries: Environmental Monitoring Report

JULY – SEPTEMBER 2016

Report no: : MEEPL/ OCT0160/2016-17	Date: 31 st October, 2016
Sample described by customer : DRINKING WATER-POTABILITY	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Type: DRINKING WATER-POTABILITY	
Marks on Sample: Location: Near Canteen	
Quantity: 5 L X 2 No. PVC Can	
Sample collected on:22.09.2016	
Received: 22.09.2016	
Registered: 22.09.2016	
Test Start/End Date: 22.09.2016/24.09.2016	

Sl. No.	Parameters	Unit	Result	Acceptable Limit (IS 10500:2012)	Method reference
1	Colour	Hazen	<1	5 Max	APHA 22 nd Ed. 2012, 2120-B, 2-6
2	Odour	--	Agreeable	Agreeable	IS 3025 (Part 7): 1983, Reaffirmed 2006
3	Taste	--	Agreeable	Agreeable	IS 3025 (Part 7): 1983, Reaffirmed 2006
4	Turbidity	NTU	0.28	1 Max	APHA 22 nd Ed. 2012, 2130-B, 2-13
5	pH	--	7.0	6.5-8.5	APHA 22 nd Ed. 2012, 4500-H+-B, 4-92
6	Free Chlorides (Residual)	mg/l	<0.05	0.2 min	APHA 22 nd Ed. 2012, 4500-Cl-G, 4-69
7	Total Dissolved Solids	mg/l	85	500 max	IS 3025 (Part 16): 1984, Reaffirmed 2006
8	Monochloramines	mg/l	<0.05	--	APHA 22 nd Ed. 2012, 4500-CIG, 4-69
9	Dichloramines	mg/l	<0.05	--	APHA 22 nd Ed. 2012, 4500-CIG, 4-69
10	Total hardness (as CaCO ₃)	mg/l	64	200 max	APHA 22 nd Ed. 2012, 4500-CIG, 4-69
11	Alkalinity Total (as CaCO ₃)	mg/l	68	200 max	IS 3025 (Part 237): 1986, Reaffirmed 2009
12	Chloride (as Cl)	mg/l	9.1	250 max	APHA 22 nd Ed. 2012, 4500-Cl-b, 4-72
13	Sulphate (as SO ₄)	mg/l	4.8	200 max	APHA 22 nd Ed. 2012, 4500-so4-e, 4-190



Head Office: Plot No. F-7, Road No. 21, Wagle Estate, Thane West - 400604, Maharashtra, India
(600 m from Hotel Rukhmini Palace Turn Opp Toyota Show Room. Near J B Sawant Bus Stop)
Phone: 2582 0658/ 3139/ 1663/ 3154 Fax: 91-22-25823543 thane@mahabal.com



Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail:mahabalaranchi@gmail.com

Hindalco Industries: Environmental Monitoring Report

JULY – SEPTEMBER 2016

Continuation Sheet
MEEPL/OCT0160/2016-17

Report no: : MEEPL/ OCT0160/2016-17					Date: 31 st October, 2016
Sl. No.	Parameters	Unit	Result	Acceptable Limit (IS10500:2012)	Method reference
14	Nitrate (as NO ₃)	mg/l	1.02	45 max	APHA 22 nd Ed. 2012, 4500-NO ₃ -E, 4-125
15	Fluoride (as F)	mg/l	0.2	1 max	APHA 22 nd Ed. 2012, 4500-FB & D, 4-84, 4-87
16	Boron (as B)	mg/l	0.07	0.5 max	APHA 22 nd Ed. 2012, 4500-BB, 4-25
17	Calcium (as Ca)	mg/l	18.5	75 max	APHA 22 nd Ed. 2012, 3500-Ca-B, 3-67
18	Magnesium (as Mg)	mg/l	5.1	30 max	APHA 22 nd Ed. 2012, 3500-Mg-B, 3-84
19	Ammonical Nitrogen/Total Ammonia	mg/l	<0.1	--	APHA 22 nd Ed. 2012, 4500-NH ₃ -F, 4-115
20	Iron (as Fe)	mg/l	0.12	0.3 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
21	Manganese (as Mn)	mg/l	N.D	0.1 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
22	Aluminium (as Al)	mg/l	0.01	0.03 max	APHA 22 nd Ed. 2012, 3500-Al-B, 3-61
23	Cadmium (as Cd)	mg/l	N.D	0.003 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
24	Chromium Total (as Cr)	mg/l	N.D	0.05 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
25	Copper (as Cu)	mg/l	N.D	0.05 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
26	Lead (as Pb)	mg/l	N.D	0.01 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
27	Zinc (as Zn)	mg/l	0.13	5 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
28	Arsenic (as As)	mg/l	0.006	0.01 max	APHA 22 nd Ed. 2012, 3114-B, 3-38
29	Selenium (as Se)	mg/l	N.D	0.001 max	APHA 22 nd Ed. 2012, 3112-B, 3-23
30	Mercury (as hg)	mg/l	N.D	0.01 max	APHA 22 nd Ed. 2012, 3114-B, 3-38
31	Nickel (as Ni)	mg/l	<0.008	0.02 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
32	Mineral Oil	mg/l	N.D	0.5 max	IS 3025 (Part 39): 1991, Reaffirmed 2003: ed. 2.1
33	Cyanide (as CN)	mg/l	N.D	0.05 max	APHA 22 nd ED. 2012, 4500-CN.C & 4-39 & 4-44
34	Anionic detergents as MBAS	mg/l	<0.1	0.2 max	APHA 22 nd ED. 2012, 5540-C.C & 5-53
35	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	N.D	0.001 max	APHA 22 nd ED. 2012, 5530-B & C 5-4753
36	Polynuclear aromatic hydrocarbons (PAH)	mg/l	N.D	0.0001 max	APHA 22 nd ED. 2012, 6440, 6-93
37	Polychlorinated Biphenyls (PCBs)	mg/l	N.D	0.0005 max	USEPA Method 8082
38	Sulphide (as S)	mg/l	N.D	0.05 max	APHA 22 nd ED. 2012, 4500-S2-C 4-175 & F 4-178



Head Office: Plot No. F-7, Road No. 21, Wagle Estate, Thane West - 400604, Maharashtra, India
(600 m from Hotel Rukhmini Palace Turn Opp Toyota Show Room. Near J B Sawant Bus Stop)
Phone: 2582 0658/ 3139/ 1663/ 3154 Fax: 91-22-25823543 thane@mahabal.com



Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail:mahabalranchi@gmail.com

Hindalco Industries: Environmental Monitoring Report

JULY - SEPTEMBER 2016

Continuation Sheet
MEEPL/ OCT0160/2016-17

Report no: : MEEPL/ OCT0160/2016-17			Date: 31 st October, 2016		
Sl. No.	Parameters	Unit	Result	Acceptable Limit (IS 10500:2012)	Method Reference
Microbiological Analysis					
1	Total Colliforms	MPN/100mL	N.D	<1.1	APHA 22 nd Ed. 2012, 9221-B & C, 9-66, 9-69 and 9-67
2	E-Coli	MPN/100mL	N.D	Absent	APHA 22 nd Ed. 2012, 9221-B & C, 9-66, 9-69 and 9-76
Pesticides Residues					
3	p.p DDT	µg/L	N.D	1	US EPA 508-1995
4	o.p DDT	µg/L	N.D	1	US EPA 508-1995
5	p.p DDE	µg/L	N.D	1	US EPA 508-1995
6	o.p DDE	µg/L	N.D	1	US EPA 508-1995
7	p.p DDD	µg/L	N.D	1	US EPA 508-1995
8	o.p DDD	µg/L	N.D	1	US EPA 508-1995
9	γ-HCH (Lindance)	µg/L	<0.01	2	US EPA 508-1995
10	α -HCH	µg/L	<0.01	0.01	US EPA 508-1995
11	β-HCH	µg/L	N.D	0.04	US EPA 508-1995
12	β- HCH	µg/L	N.D	0.04	US EPA 508-1995
13	Butachlor	µg/L	N.D	125	US EPA 508-1995
14	Alachlor	µg/L	N.D	20	US EPA 508-1995
15	Atrazine	µg/L	N.D	2	US EPA 508-1995
16	α Endosulfan	µg/L	N.D	0.4	US EPA 508-1995
17	β Endosulfan	µg/L	N.D	0.4	US EPA 508-1995
18	Endosulfan Sulphate	µg/L	N.D	0.4	US EPA 508-1995
19	Ethion	µg/L	N.D	3	US EPA 8141A-1994
20	Malathion	µg/L	N.D	190	US EPA 8141A-1994
21	Methoyl Parathion	µg/L	N.D	0.3	US EPA 8141A-1994
22	Monocrotophos	µg/L	N.D	1	US EPA 8141A-1994
23	Phorate	µg/L	N.D	2	US EPA 8141A-1994
24	Chlorpyrifos	µg/L	N.D	30	US EPA 8141A-1994
25	Aldrin	µg/L	N.D	0.03	US EPA 508-1995
26	Dieldrin	µg/L	N.D	0.03	US EPA 508-1995
Remarks: N.D- Not Detected					

Conclusion : The Physical & Chemical Analysis report indicates that the water is not contaminated and potable.

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE



Head Office: Plot No. F-7, Road No. 21, Wagle Estate, Thane West - 400604, Maharashtra, India
(600 m from Hotel Rukhmini Palace Turn Opp Toyota Show Room. Near J B Sawant Bus Stop)
Phone: 2582 0658/ 3139/ 1663/ 3154 Fax: 91-22-25823543 thane@mahabal.com